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(72) Inventor: **Watts, Derek John**  
**Wildwood, Stafford, ST17 4SQ (GB)**

(74) Representative: **Waters, Jeffrey**  
**GEC PATENT DEPARTMENT,**  
**Waterhouse Lane**  
**Chelmsford, Essex CM1 2QX (GB)**

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(71) Applicant: **General Domestic Appliances Limited**  
**Peterborough PE2 9JB (GB)**

(54) **Laundry dryer**

(57) A laundry dryer comprises a drum 1, a motor for rotating the drum and a heater for heating air to be passed through the drum. Conventionally, laundry left in the drum on completion of a drying programme (selected by means of heat setting selector 5 and timer control 6), begins to crease and becomes difficult to iron. The invention provides means, selectively operable by turning timer control 6 to mark 7, for producing a conditioning sequence, to reduce creases in laundry in the drum, with heated air and unheated air being passed through the rotating drum.

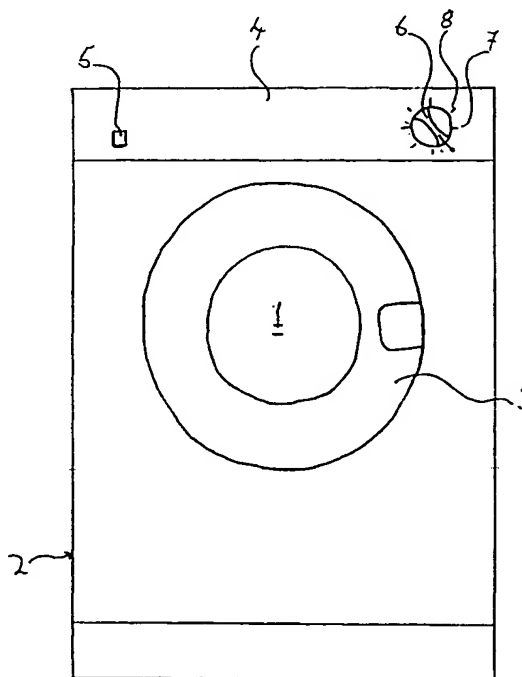


FIG. 1.

## Description

This invention relates to laundry dryers.

A conventional laundry dryer typically comprises a drum, a motor for rotating the drum and a heater for heating air to be passed through the drum. Such a dryer operates in accordance with a programme selected by a user to dry damp laundry placed into the rotatable drum.

A problem which may be encountered with such laundry dryers is that, if dry laundry is not taken out of the drum soon after the drying programme is finished, the items of laundry tend to become creased due to the weight of other items resting on them. The creases can make the laundry more difficult to iron.

The invention provides a laundry dryer comprising a drum, a motor for rotating the drum and a heater for heating air to be passed through the drum, characterised in that there is provided selectively operable means for producing a conditioning sequence, to reduce creases in laundry in the drum, with heated air and unheated air being passed through the rotating drum.

The provision of heated air followed by unheated air relaxes the structure of the fibres of the laundry, thereby reducing the stiffness of the fabrics. This reduces creases and facilitates ironing of the laundry.

Preferably, the drum is arranged to rotate in opposite rotational directions during the conditioning sequence. This feature prevents entanglement of the items of laundry.

The laundry dryer includes advantageously means for producing an audible signal when the conditioning sequence is finished, to alert the user of the dryer.

The dryer may be arranged so that the period of time during which heated air is provided to the dry laundry is between two and four times longer than the period during which unheated air is provided.

The dryer may be arranged so that the overall length of time of the conditioning sequence is between five and twenty minutes.

The invention will now be described, by way of example, with reference to the accompanying drawings, in which:-

Figure 1 is a front view of a laundry dryer constructed according to the invention; and

Figure 2 shows a timer control for the laundry dryer of Figure 1.

Referring to Figure 1, the laundry dryer comprises a rotatable drum 1 housed in a cabinet 2, the drum being closed by a door 3. The drum 1 is rotated by a motor (not shown) by means of, for example, a drive belt. A heater (also not shown) is provided within the cabinet 2 of the dryer. In operation, the heater heats air which is passed through the drum 1 while the drum rotates, so that damp laundry placed in the drum is tumbled in a

warm air stream.

The laundry dryer further comprises a control panel 4, so that a user of the dryer can select a programme, according to which the dryer operates. The control panel 4 comprises a heat setting selector 5 and a timer control 6. A user of the laundry dryer places a load of damp laundry in the drum 1, selects a heat setting by, for example, depressing heat setting selector 5, and selects a drying time by turning timer control 6, which is shown in more detail in Figure 2.

A plurality of periods of time, expressed in minutes, are printed on the control panel 4, around the timer control 6. The user selects a drying time by rotating the timer control 6 clockwise until it points to the desired time period.

The laundry dryer then operates according to the selected programme, the last few minutes of which involves unheated air being passed through the rotating drum. An audible signal, such as a buzzer is arranged to sound on completion of the drying programme, to alert the user. If the user does not remove the dry load from the drum 1 soon after the drying programme has finished, creases begin to form in the laundry. This is particularly so for items of laundry resting at the bottom of the drum because these items have the weight of the remainder of the laundry acting on them. A user, returning to the dryer some time after the drying programme has finished, finds that the laundry has become creased and difficult to iron.

In accordance with an embodiment of the invention, there is provided means for producing a conditioning sequence, which is selectively operable by means of the timer control 6. On completion of the drying programme, the timer control 6 points to zero, as shown in Figure 2. The user can rotate timer control 6 to the mark indicated by the reference numeral 7. This operation initiates the conditioning sequence.

The conditioning sequence comprises a first time period, during which heated air is passed through the rotating drum, followed by a second period during which unheated air is passed through the rotating drum. The heating and subsequent cooling of the laundry causes the fibres of the material to relax, which reduces creases in the material and makes the laundry easier to iron. The rotation of the drum 1 further reduces creasing, by keeping the items of laundry moving so that no item is compressing another. Of course, in some circumstances, the conditioning sequence may not always remove all of the creases in the laundry.

The drum 1 can be arranged to rotate in one direction throughout the conditioning sequence or to change direction part way through the sequence. Alternatively, the direction of rotation can be changed periodically. Changing the direction of rotation of the drum 1 prevents entanglement of the laundry.

The conditioning sequence typically takes approximately 10 minutes, of which approximately 7½ minutes involves passing heated air through the drum, and 2½

minutes involves passing unheated air through the drum. Of course, the invention is not limited to these time periods.

On completion of the conditioning sequence, timer control 6 points to the mark indicated by the reference numeral 8, and an audible signal is arranged to sound to alert the user. The audible signal may be the buzzer used to indicate completion of the main drying programme. Alternatively, a light, or other visual indicator, can be employed.

If the laundry is removed from the dryer and ironed soon after this sequence has ended, comparatively less time and effort is required to iron the fabrics than that required to iron creased laundry.

The invention is not limited to conditioning a load which has firstly been dried in the dryer. For example, clothes which have become crumpled during a period of storage in, say, a drawer, can be conditioned in the dryer. In this instance, the user avoids the conventional drying programmes and instead turns timer control 6 to mark 7, to initiate the conditioning sequence.

The invention can also be used to condition laundry which has been hung out to dry on a washing line. Laundry dried in this manner can become stiff, due to being subjected to prolonged periods of warm air, which can overdry the laundry. The user again avoids the conventional drying programme and instead rotates timer control 6 to mark 7 in order to start the sequence.

Further variations may be made without departing from the scope of the invention. For instance, the conditioning sequence need not be started by rotation of the timer control. A depressable button, or some other mechanical or electrical device could be used.

## Claims

1. A laundry dryer comprising a drum (1), a motor for rotating the drum and a heater for heating air to be passed through the drum, characterised in that there is provided selectively operable means (6) for producing a conditioning sequence. to reduce creases in laundry in the drum, with heated air and unheated air being passed through the rotating drum.
2. A laundry dryer as claimed in claim 1, characterised in that the drum is arranged to rotate in opposite rotational directions during the conditioning sequence.
3. A laundry dryer as claimed in claim 1 or 2, characterised by audible signalling means, arranged to sound on completion of the conditioning sequence.
4. A laundry dryer as claimed in claim 1, 2 or 3, characterised in that the means for producing a conditioning sequence provides heated air for a longer

period of time than unheated air.

5. A laundry dryer as claimed in claim 4, characterised in that the period during which heated air is provided is between two and four times longer than the period during which unheated air is provided.
6. A laundry dryer as claimed in any one of claims 1 to 5, characterised in that the length of time of the conditioning sequence is between five and twenty minutes.

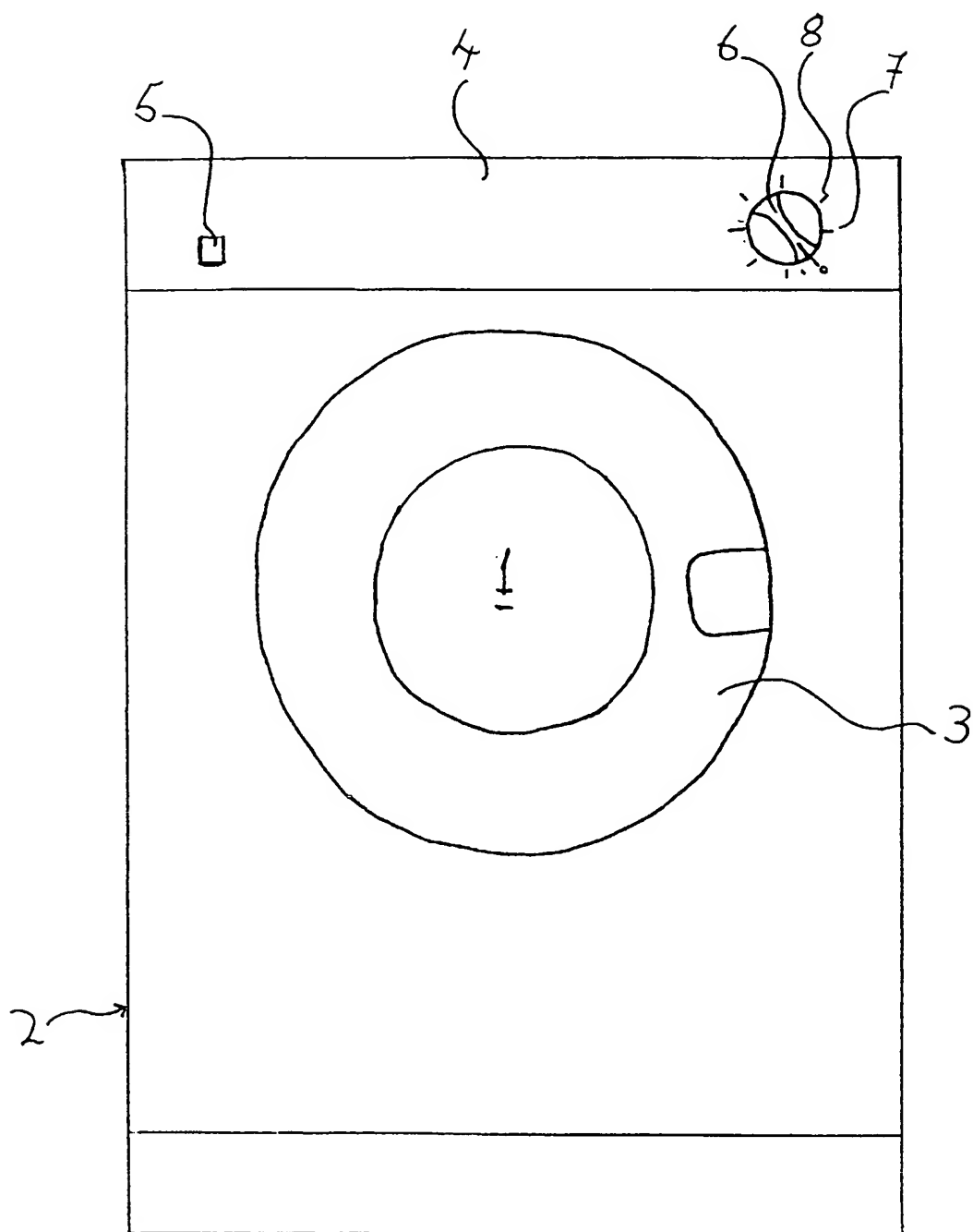


FIG. 1.

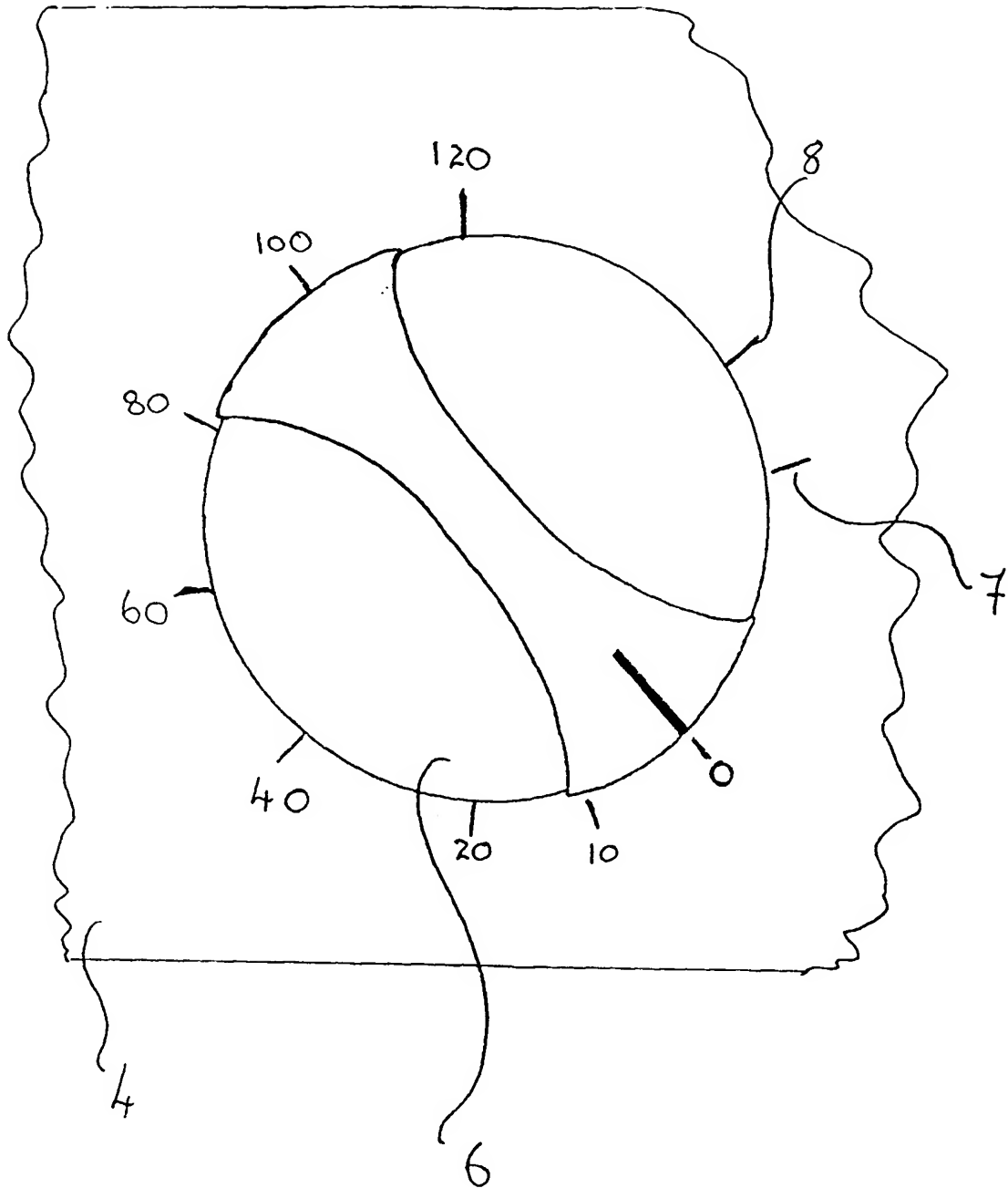


FIG. 2.